

Watching it in 3D: Effects of Stereoscopic Information on Object Recognition and Movie Perception

Frank Papenmeier¹, Markus Huff¹, Hauke S. Meyerhoff² & Stephan Schwan²

¹Department of Psychology, University of Tübingen, Germany

²Leibniz-Institut für Wissensmedien (IWM), Tübingen, Germany

Viewing objects with stereoscopic displays provides additional depth cues through binocular disparity. With this poster, we will present two lines of research investigating the influence of stereoscopic information on object recognition and movie perception. In our first line of research, we studied the influence of stereoscopic information on object recognition. While previous findings showed that stereoscopic information supports object recognition, it was unknown whether this results from the representation of specific stereoscopic information in memory or a more general representation of an object's depth structure. Therefore, we investigated whether continuous object rotation acting as depth cue during encoding results in a memory representation that can subsequently be accessed by stereoscopic information during retrieval. In three experiments, we found evidence for transfer effects from continuous object rotation during encoding to stereoscopic presentations during retrieval. Furthermore, there was an interaction between the presence of stereoscopic information and the presence of continuous object rotation as depth cues during encoding. In particular, stereoscopic information supported the encoding of an object's depth structure into memory only when continuous rotation as depth cue was absent. We conclude that an object's depth structure and not specific depth cues are represented in memory. The second line of research that we want to present investigated the influence of stereoscopic information on movie perception. We asked participants to decide whether short movie clips of five seconds length contained a filmic cut or not. The presentation of the movie clips in 3D resulted in a higher cut detection rate than the presentation in 2D. This demonstrates that stereoscopic information increases the salience of filmic cuts.